AMENDMENTS TO THE SPECIFICATION

Please replace paragraph no. 1, on page 39, with the following amended paragraph:

Noting this, for the purpose of eliminating shutdown-induced banding before formation of a patch image, each developer roller 44 is rotated idle in the image forming apparatus according to this preferred embodiment. As the right-hand side flow (the pre-operation 2) in Fig. 7 shows, first, the yellow developer 4Y is positioned at the developing position facing the photosensitive member 2 (Step S25), and after setting the average developing bias Vavg to a value having the smallest absolute value within a variable range of the average developing bias (Step S26), the developer roller 44 is rotated at least one round using the rotation driver (not shown) which is disposed to the main section (Step S27). Following this, while rotating the developer unit 4 and thereby switching the developer (Step S28), the other developers 4C, 4M and 4K are positioned at the developing position in turn and the developer roller 44 disposed to each developer is rotated one round or more (Step S29). As each developer roller 44 is rotated idle one round or more in this manner, a toner layer on the surface of each developer roller 44 is peeled off and re-formed by the supply roller 43 and the restriction blade 45. Hence, thus re-formed more uniform toner layer is used for subsequent formation of a patch image, which makes it less likely to see a density variation attributed to shutdown-induced banding.

Please replace paragraph no. 2, on page 65, with the following amended paragraph:

As the densities of the patch images (to be more specific, the evaluation values for the patch images) are thus calculated, an optimal value Vop of the average developing bias Vavg is calculated based on these values (Step S47). Fig. ~~18~~19 is a flow chart which shows a process of calculating the optimal value of the developing bias in this preferred embodiment. This process

2

remain unchanged in terms of content among the toner colors, and therefore, the subscripts (y, c,

m, k) expressing evaluation values and corresponding to the toner colors are omitted in Fig.

~~18~~19. However, the evaluation values and target values for the evaluation values may of course

be different value among the different toner colors.

Please replace paragraph no. 1, on page 70, with the following amended paragraph:

Following this, the exposure energy E is set to an optimal value. Fig. ~~19~~20 is a flow chart

which shows a process of setting the exposure energy in this preferred embodiment. As shown

in Fig. ~~19~~20, the content of this process is basically the same as that of the developing bias

setting process described earlier (Fig. 15). That is, first, the average developing bias Vavg is set

to the optimal value Vop calculated earlier (Step S51), and while increasing the exposure energy

E from the lowest level 0 by one level each time, a patch image is formed at each level (Step

S52, Step S53). The sensor outputs Vp and Vs corresponding to the amount of reflection light

from each patch image are sampled (Step S54), spike-like noises are removed from the sample

data (Step S55), an evaluation value expressing a density of each patch image is calculated (Step

S56), and the optimal value Eop of the exposure energy is calculated based on the result (Step

S57).

Please replace paragraph no. 1, on page 71, with the following amended paragraph:

During this process (Fig. ~~19~~20), only differences from the developing bias setting process

described earlier (Fig. 15) are patterns and the number of patch images to be formed and a

calculation of the optimal value Eop of the exposure energy from evaluation values. The two

processes are almost the same regarding the other aspects. These differences will now be

described mainly.

Please replace paragraph no. 2, on page 72, with the following amended paragraph:

Fig. 2021 is a drawing which shows a low-density patch image. As described earlier, this preferred embodiment requires to change the exposure energy E over four stages. In this example, one patch image at each level and four patch images Ie0 through Ie3 in total are formed. A pattern of the patch images used in this example is formed by a plurality of thin lines which are isolated from each other as shown in Fig. 2021. To be more specific, the pattern is a 1-dot line pattern that one line is ON and ten lines are OFF. Although a pattern of a low-density patch image is not limited to this, use of a pattern that lines or dots are isolated from each other allows to express a change in exposure energy E as a change in image density and more accurately calculate the optimal value of the exposure energy E.

Please replace paragraph bridging page 73 and 74, with the following amended paragraph:

Gaps L5 between the respective patch images may be narrower than the gaps L2 shown in Fig. 16. This is because it is possible to change an energy density of the light beam L from the exposure unit 6 in a relatively short period of time, and particularly when a light source of the light beam is formed by a semiconductor laser, it is possible to change the energy density of the light beam in an extremely period of time. Such a shape and arrangement of the respective patch images, as shown in Fig. 2021, permits to form all of patch images Ie0 through Ie3 over one round of the intermediate transfer belt 71, and hence, to shorten a processing time.

Please replace paragraph no. 1, on page 74, with the following amended paragraph:

As for thus formed low-density patch images Ie0 through Ie3, evaluation values expressing the densities of these images are calculated in a similar manner to that described

earlier for the high-density patch images. Based on the evaluation values and control target

values derived from the look-up table (Fig. 14B) for low-density patch images separately

prepared from the look-up table for high-density patch images, the optimal value Eop of the

exposure energy is calculated. Fig. ~~21~~22 is a flow chart which shows a process of calculating the

optimal value of the exposure energy in this preferred embodiment. During this process as well,

as in the process of calculating the optimal value of the direct current developing bias shown in

Fig. ~~18~~19, the evaluation value is compared with a target value At on the patch images starting

from the one formed at a low energy level, and a value of the exposure energy E which makes

the evaluation value match with the target value is then calculated, thereby determining the

optimal value Eop (Step S571 through Step S577).

Please replace paragraph bridging page 74 and 75, with the following amended

paragraph:

However, since within a range of the exposure energy E which is usually used, a

saturation characteristic (Fig. 17B) found on the relationship between the solid image densities

and the direct current developing bias will not be found on a relationship between the line image

densities and the exposure energy E, a process corresponding to the step S473 shown in Fig.

~~18~~19 is omitted. In this manner, the optimal value Eop of the exposure energy E with which a

desired image density will be obtained is calculated.

Please replace paragraph no. 3, on page 105, with the following amended

paragraph:

The halftoned CMYK color-tone data inputted to the pulse modulation section 117

indicate respective sizes of the CMYK color toners to be made adhere to each pixel. Based on

such halftoned CMYK color-tone data thus received, the pulse modulation section 117 generates

a video signal for pulse width modulation of an exposure laser pulse for each of CMYK color

images, the exposure laser pulse applied by the engine EG. Then, the pulse modulation section

117 outputs the resultant signal to the engine controller ~~12~~10 via a video IF not shown. In

response to the video signal, the laser driver 121 performs ON/OFF control of a semiconductor

laser of the exposure unit 6 whereby an electrostatic latent image of each of the color

components is formed on a photosensitive member 2. Normal printing is performed in this

manner.

Please replace paragraph no. 1, on page 106, with the following amended

paragraph:

Furthermore, the image forming apparatus has a tone correction mode which is

performed at a proper time after the activation of the apparatus, for example, for forming a

gradation patch image for tone correction and re-defining the look-up table. Operations in the

tone correction mode are carried out as follows. For each toner color, the engine EG forms a

predetermined gradation patch image for tone correction on the intermediate transfer belt ~~41~~71,

the patch image used for the determination of the gamma characteristics. The density sensor 60

senses amounts of toner adhered to each gradation patch image. Based on signals from the

density sensor 60, the tone-characteristic detection section 123 generates a tone characteristic

curve (the gamma characteristics of the engine EG) relating the sensed image densities to the

tone levels of each gradation patch image and then, outputs the resultant characteristic curve to

the look-up table operation section 119 of the main controller 11.

Please replace paragraph no. 1, on page 110, with the following amended paragraph:

Specifically, the look-up table operation section 119 performs operation based on the tone characteristics supplied from the tone-characteristic detection section 123 thereby generating look-up table data for obtaining the ideal tone characteristics as compensating for the measured tone characteristics of the engine EG. Subsequently, the look-up table operation section 119 updates the content of the look-up table 118 to the resultant data (Step S865 in Fig. 32). In this manner, the look-up table 118 is re-defined (tone correction mode).

On page 124, last line please delete:

~~(Fig. 10)~~